

## **METHOD AND APPARATUS FOR DIAGNOSIS AND BEHAVIOR MODIFICATION OF AN EMBEDDED MICROCONTROLLER**

### **ABSTRACT OF THE DISCLOSURE**

5           A method of accessing an embedded microcontroller, by programmably selecting  
pins of the microcontroller for use as test lines, receiving a scan command at an input test  
line pin, emulating a virtual scan path through a logical block of the microcontroller, and  
transmitting scan results to an output test line pin. The microcontroller can provide such  
emulation of scan testing in compliance with the JTAG standard for a test access port and  
10   boundary-scan architecture. The test line pins are interconnected with a test bus structure  
to form a scan ring with other components of a data processing system, such as a  
microprocessor. The emulation can be used to change a functional mode of the  
microcontroller, or gather diagnostic information after a system error. The  
microcontroller assigns a high-priority internal interrupt routine to service test line pin  
15   activity. The virtual scan path need not include all internal microcontroller resources,  
and the scan path can be programmably varied by the application designer.